University of Minnesota

All-University Council on Environmental Quality

FIRST "ANNUAL" REPORT

for the years

1971-72, 1972-73, 1973-74

October 1974

ALL-UNIVERSITY COUNCIL ON ENVIRONMENTAL QUALITY -- MEMBERSHIP FALL 1974

(Membership for previous years listed on pages 21-23)

Dean E. Abrahamson (Chairman), Professor, School of Public Affairs
Perry Blackshear, Professor, Department of Mechanical Engineering
Richard Bond, Professor, School of Public Health
John Borchert (ex officio), Professor, Department of Geography
Alan Freeman, Associate Professor, Law School
John Green, Professor, Department of Geology (Duluth)
Robert Holloway, Professor, Department of Marketing and Business Law
Allen Johnson, Assistant Professor, General College
Roger Johnson, Associate Professor, College of Education
Kathryn Hoelmer, Instructor, Related Education Division (Waseca)
William Miles, Professor, College of Forestry
Richard Skaggs, Associate Professor, Department of Geography
Thomas Straw, Associate Professor, Division of Science and Mathematics (Morris)
W. Daniel Svedarsky, Assistant Professor, Department of Agriculture (Crookston)
John Tester, Professor, Department of Ecology and Behavioral Biology
John Waelti, Associate Professor, Department of Agriculture and Applied Economics
Donald White, Professor, Department of Horticultural Science

COUNCIL STAFF - FALL 1974

Mary Trigg, Departmental Assistant
Lorna McKeen, Senior Secretary
Steven Emmings, Assistant Scientist

UNIVERSITY OF MINNESOTA

ALL-UNIVERSITY COUNCIL ON ENVIRONMENTAL QUALITY

FIRST "ANNUAL" REPORT

for the years 1971-72, 1972-73, 1973-74

October 1974

All-University Council on Environmental Quality
967 Social Science Building
University of Minnesota
Minneapolis, Minnesota 55455

CREATION OF THE ALL-UNIVERSITY COUNCIL ON ENVIRONMENTAL QUALITY

Prior to the formation of the Council, there was a recognized need for a university activity directly addressing environmental quality. Several environmentally oriented activities, including teaching, research and public service were underway, but there had not been any formal attempt to coordinate programs, assemble information on existing programs, or explore possible new programs.

In the fall of 1969, Vice-President William Shepherd appointed the ad hoc Intercollegiate Committee on Environmental Studies (InCESt). This committee was charged to examine existing programs in the University of Minnesota, to explore needs, and to suggest possible new or revised programs at the all-university level relating to the environment.

InCESt, consisting of faculty members from various units of the Minneapolis and St. Paul campuses and chaired by John Borchert, Director of the Center for Urban and Regional Affairs, met during the 1969-70 academic year and in June 1970 submitted its report recommending the formation of a Council on Environmental Quality.

In October 1971, the InCESt recommendations were acted on and the All-University Council on Environmental Quality was established. Dean E. Abrahamson, Professor of Public Affairs, was appointed Chairman of the Council and twelve faculty members from various units of the Minneapolis and St. Paul campuses were appointed for staggered terms to the Council. In 1972 the Council membership was expanded to 18 members including representatives from the Duluth, Crookston, Morris and Waseca campuses.

The Council is administratively associated with the Center for Urban and Regional Affairs and basic financial support is provided by CURA. The Council also receives grants and contracts for activities supported by organizations outside the University. For example, during academic year 1973-74 the Council received grants or contracts from the Minnesota State Planning Agency, the Johnson Foundation, and the Minnesota Academy of Sciences.

OBJECTIVES OF THE COUNCIL

The Council has concentrated its efforts on new activities and on activities whose success require coordination between existing units of the University. This includes reviewing requests for support of environmental efforts from any and all units of the University. The general objectives of the Council are: to serve as a source of information for faculty and students on courses, counseling and research proposals; to facilitate educational opportunities in environmental sciences; to develop public service programs; and to assist in administration of, fiscal support, credit and evaluation for, programs, courses, and research relating to the environment.

More specifically, the Council's objectives are focused in the following areas:

1. Information: To compile and update descriptions of courses and programs pertaining to environmental quality and management with the preparation of a special bulletin. To refer students to appropriate advisors and assist them in designing environmental programs. To coordinate faculty and/or student research proposals.

2. Instruction: To arrange and fund multi-disciplinary, undergraduate and graduate seminars dealing with specific environmental problems. To encourage and fund new approaches to multi-disciplinary learning especially in environmental studies.

3. Research: To encourage and fund research on environmental issues, particularly those issues having interest to the State of Minnesota, with priority given to research having policy implications in land use, environmental implications of growth, energy supply and end uses, and water resources.

4. Public Service: To develop and fund a public, continuing education lecture series. To develop a work-study program involving public and private organizations which could benefit

from the employment of students on specific environmental problems. To use university resources to extend environmental knowledge to the public and to schools and act as a clearinghouse for state and local government requests for consultant opinions on environmental questions.

5. Administration: To assist in the arrangement of student credit for innovative multi-disciplinary study. To encourage proper recognition and fiscal support for work done by cooperating faculty in new multi-disciplinary courses and seminars. To act as a clearinghouse in the exchange of environmental information.

COUNCIL ACTIVITIES

The work of the Council is carried out by Council members, by faculty and students working on the various campuses of the University with Council support, and by the Council's staff. The Chairman of the Council has a half-time appointment as a project coordinator in the Center for Urban and Regional Affairs. In addition, the Council has had a full or part-time secretarial position and also one staff member. During its first two years Mr. Steven Emmings, worked with the Council. In the fall of 1973 Mr. Emmings returned to school and the Council staff position was filled by Ms. Mary Trigg.

Council members, other than the chairman, do not have appointments with the Council or with CURA. They are appointed by the Vice-President for Academic Affairs and serve on the Council as they would on other all-university committees. Although Council members are appointed as individuals, and are not considered to formally represent their Colleges, an effort is made to have broad representation on the Council.

Much of the Council's work is done through grants to faculty members or students. These grants fall into three, sometimes overlapping, categories: research, teaching, and public service. During the first year, 1971-72, the Council had a very limited budget and could support only modest activities. During the second year, 1972-73, the Council

worked to develop criteria and guidelines for its granting activities. Several grants, both for teaching and for research, were made during 1972-73 although the final guidelines and criteria had not yet been established. From the outset there was agreement that the Council would focus its grants for teaching on those courses that cut across traditional disciplinary lines, and that the research grants, because of the Council's objectives and level of funding, would be "seed" grants enabling an activity to begin or to indicate the feasibility of a project which would hopefully be able to attract more substantial funding once underway.

The Council's projects and activities, which include grants that have been awarded by the Council, have been grouped into the categories of Information, Instruction, Research, Public Service, and Administration. (In some cases individual activities include more than one of these components.)

PROVIDING INFORMATION

Bulletin of Environmentally Related Courses and Programs

One of the first Council activities was the writing and publication of a University bulletin which included environmentally-related courses and programs at the University and also some non-university activities and services commonly used by students. This bulletin, which includes courses and programs from virtually all units of the University, is the first bulletin not organized along administrative lines. It is topically arranged and includes environmental activities regardless of their administrative home. The bulletin is now in its third edition, and from all indications has been well received and used by students and faculty alike.

There were some administrative difficulties with the publication of this bulletin. It being the first, and to date the only, University bulletin not given to describing courses and programs in a single college, special procedures had to be used for its approval.

Although it is a useful and pioneering publication of the University, there is some question as to whether it can be continued. The publication of University bulletins is expensive, and all publication costs for other University bulletins are paid from central administration accounts. After considerable negotiation, approval was given for payment of printing the first two editions of the "Bulletin of Environmentally-Related Courses and Programs," from these central accounts. However, in 1973 the Council was informed that in the future these accounts could not be used for payment of bulletins other than those oriented toward individual administrative units, and could not be used for the publication of bulletins that included descriptions of programs and courses by topic. Hence, unless a reversal of this administrative decision is obtained, the Council will be forced to pay for the bulletin out of its meager resources. There is some question as to whether this will continue to be possible, although the Council is proceeding with the third edition, scheduled for publication in the fall of 1974.

The objective of the bulletin is to bring together, in a form most useful to students, faculty, and others, a concise description of environmental services and activities both at the University and in the Twin Cities. All units of the University, including the coordinate campuses, are involved in reviewing their courses and programs so that those with primary environmental emphasis are identified in the bulletin. Some units are involved in developing new courses and programs. Those public agencies maintaining libraries with environmental holdings are also included. The bulletin makes available a complete listing of environmental courses and programs, enabling those in and outside of the University to find out about these programs in a systematic manner. It has also provided an impetus for revision and initiation of environmental courses and programs.

The third edition of the bulletin is scheduled to be published in December 1974 and will emphasize not only environmentally related courses and programs but also those relating to planning and to urban studies. The Council will join with the Planning Program of the School of Public Affairs and the Urban Studies Program in publishing the third edition of

the bulletin entitled, the "Bulletin of Courses and Programs in the Environment, Urban Problems, and Planning."

Student Counseling

Students interested in environmental programs and courses are referred to advisors drawn from the cooperating faculty. The Council maintains a registry of courses, special programs, possible work openings and active research activities which utilize student participation.

INSTRUCTION

The Council has made two grants for new courses. In the Spring of 1974 the Council agreed on formal guidelines for its support of courses. Because of funding limitations, it is unlikely that the Council will be able to greatly expand its course funding, although it is hoped that at least one or two new courses or other instructional activities per year can be supported. It should also be emphasized that these instructional grants are intended for operational support of instructional activities. Support for the development of new instructional programs will, it is hoped, continue to be available from the All-University Council on Liberal Education through its educational development small-grants program.

Experimental Course in General College, Minneapolis Campus (February 1973, Professor Allen Johnson, $500)

Funds were requested for the implementation of a 16-credit Environmental Package in the General College. The Council approved partial funding ($500) of the course. The package was designed to implement new approaches in interdisciplinary learning. The primary objective of the package was the integration of two major types of curricular approaches focusing on environmental issues. One approach or component centered around the more formalized study of the ecological and social aspects of the environment. The second component of the package centered around student fieldwork and problem-oriented study of actual

environmental problems in the Twin Cities area. The Spring 1973 offering of the package focused on a regional approach with emphasis on studies of the politics, economics, and ecology of environmental problems in the St. Croix River Valley.

University of Minnesota - Duluth Course (February, 1973 - $600; Spring 1974 - $990, Professor Roy Hoover and Professor Fred Witzig)

Two UMD faculty members sought funding for their course IS 3-100, "Man's Environment: His Future" (3 cr.). The faculty for this course was drawn from across the campus and included representatives from the natural and social sciences who lectured on topics appropriate to the basic theme of the course. The lectures covered selected topics within the spectrum of man's environment. Students were also required to participate in a group research study project.

During the spring quarter, 1974, the course was primarily devoted to the subject of the environment of recreation. The course material was divided into two parts: one consisting of an invitation to representatives from various components of the recreational environment to meet with the class, the second consisting of class visitation to several of the recreational facilities in northern Minnesota and Wisconsin.

RESEARCH

The Council makes small grants for research, and in addition receives research grants and contracts from outside sources. During the first year of the Council's operation the first of these small grants were made on an ad hoc basis. In the fall of 1972, when the Council again received several requests for support of research, it was obvious that a set of priorities were needed to guide the funding of small research proposals.

During academic year 1972-73 the Council met several times to discuss research priorities. By the spring of 1973 the following broad topics were selected as high priority for Council support: Growth policy

Land Use, Water Resources, Energy Policy, and Environmental Education.

In March 1973 workshops in each of these broad issue areas were established, under the chairmanship of Council members, and charged to consider, for each area: (1) the nature of the problem, (2) the alternative solutions to the problem, and (3) the research needs implied by the various alternatives.

These workshops, and their leaders were:

Growth Policy	Robert Holloway and Perry Blackshear
Land Use	Lowell Hanson, John Borchert and W. Svedarsky
Energy Policy	Dean Abrahamson and Richard Skaggs
Environmental Education	Roger Johnson

In November 1973 the first general notice of the small-grant program for research relating to environmental quality was circulated throughout the University, and proposals were solicited. The Council also established a standing research committee to evaluate proposals and make recommendations to the Chairman of the Council. The committee members, appointed for staggered terms, are: Thomas Straw, (chairman), Richard Bond, John Waelti, and Dean Abrahamson (ex officio).

The Council requires essentially the same proposal format as does the Graduate School Grant-In-Aid small grant program. High priority is given to research which has direct bearing on Minnesota's environmental policy issues.

Following are brief descriptions of research projects supported by the Council's small grants program and also by contracts or grants that have been made to the Council.

Research That Has Been or Is Being Supported by the Council:
Copper-Nickel Studies

For the three years that the Council has been in existence, it has supported various studies on the impact and technological aspects of possible copper-nickel mining in Minnesota:

1. Assessment of Potential Impact of a Copper-Nickel Industry in Minnesota (1971-72). The objective of this assessment was to initiate and carry out a comprehensive review of the total impact of a cu-ni industry in Minnesota and to join the resources of the University with those of responsible state agencies. Over fifty faculty members from various departments, students, and agency staff took part in discussions. Participating agencies included the Minnesota Pollution Control Agency, the Minnesota State Planning Agency and the Minnesota Department of Natural Resources.

2. Environmental Inventory of the Area of Potential Copper-Nickel Mining in Northeastern Minnesota (1972-73, Professors H.E. Wright and E.J. Cushing, $5,200). A study was proposed to prepare an inventory of the landscape features of the area near the base of the Duluth Gabbro Complex along the South Kawishiwi River including land forms, soils, vegetation, and water bodies. Field work was undertaken and the data analyzed. The data is to serve as a model for environmental impact studies in other forested areas. In addition to the field mapping and data analysis, a seminar on vegetation mapping was held during the winter quarter, 1973.

3. Copper-Nickel Studies by Professor H.M. Tsuchiya (July 1973, $500). Professor Tsuchiya has been working for some time on a new process (biometallurgical) for copper-nickel extraction. In July 1973 the Council approved a grant of $500 for supplies in Professor Tsuchiya's ongoing study.

4. Copper-Nickel Study in Conjunction with the Minnesota State Planning Agency and the Minnesota Department of Natural Resources (1973-75, grant from the Minnesota State Planning Agency). At its fall quarter 1973 meeting, the Council established a task force (John Green, chairman; Perry Blackshear; John Borchert and Alan Robinette) to undertake the implementation of a grant to the Council from the Minnesota State Planning Agency to study copper nickel mining

in Minnesota. The Minnesota Resources Commission appropriated $100,000 to the State Planning Agency to fund an investigation of the impact of copper-nickel mining in Minnesota and the money was to be divided equally between the State Planning Agency, the Department of Natural Resources and the University. The University was asked to undertake a study of technology assessment of copper-nickel mining.

The Council's task force, in consultation with Dr. Arnold Silverman, Professor at the University of Montana, reviewed several proposals which had been solicited by them and approved funding from the State Planning Agency's grant of the following:

a. Socio-economic Impacts of Copper-Nickel Mining Via System Dynamics: (Professors P. Starr and H. Hickman, $6,000). The project's objective is to develop a System Dynamics model able to trace regional socio-economic changes in response to the introduction of cu-ni mining in the Arrowhead region of Minnesota. Special focus will be placed on identifying impacts requiring attention from the government and upon system "pressure points." While it cannot predict the future, the model can serve the decision maker by investigating the general behavioral characteristics of alternate policies making clear the relative merits and possible consequences of each.

b. Study of the Vegetation Effects of Air Pollutants Associated with Copper-Nickel Mining and Smelting Operations: (Professor John Kotar, UMD, $1,650). The study will examine patterns of diameter and height growth of several coniferous tree species in the vicinity of the White Pine Smelter in Michigan. In addition to growth studies a technique of using infrared photography for detection of

physiological disorders in forest trees will be used.

c. Technical, Economic, and Environmental Impact Study of Modern Pyrometallurgical Processes for Treating Bulk Sulfide Flotation Concentrates from Minnesota Copper Nickel Deposits: (James Lawver, $5,216). Dr. Lawver obtained a small portion of the 10-ton sample taken from the Inco pit for pilot plant testing. Mineralogical studies were completed and bulk sulfide flotation tests performed. The data will be used to model a typical modern pyrometallurgical process so that input-output data which could be used for environmental impact statements, as well as an economic report, can be provided.

Lakeshore Development Study (Fall 1973, Professors L. Maki and D. Olsen, $5,000).

The purpose of the project is to bring up to date, and expand, the 1967 Minnesota Lakeshore Study for the counties in the Arrowhead Development Region. The earlier study was a CURA project and provided the impetus for the Shoreland Control legislation. The Council approved funding of $5,000 which covered student salaries and travel expenses connected with the project.

Study of the Heron and Egret Rookeries of Pig's Eye Lake as a Measure of Environmental Quality (1974, Professor D. Warner, $4,100).

This is a continuing study of these rookeries to establish their response to man's encroachment physically or by noise or chemical pollution and to establish their value both intrinsically and as indicators of environmental quality. The study will give basic and critically needed information on: levels of pesticide residues on egg shell formation and reproductive success; response of the herons and egrets to current food resource; response of the birds to noise pollution and response of the birds to direct intervention by humans.

Study of Effects of Timber Cutting on Lake-Water Quality in Northern Minnesota (1974-75, Professor H.E. Wright, $4,000).

The study will include a stratographic analysis of lake sediment cores to correlate the occurrence of pollen, diatoms, and other fossils with historical records of timber cutting, especially clear-cutting. The project is intended to study directly the comparative effects of fire logging on the forests of northern Minnesota and will have practical significance in the Boundary Waters Canoe Area because of its implications for management.

Trace Metals and Water Quality (1974, Professor D. Gerhart, $1,268).

This study involves the influence of trace elements on phytoplankton growth and succession. A need exists for studies of phytoplankton successions in continuous culture and in large in situ enclosures to help elucidate the role of these minor elements in regulating natural communities of phytoplankton. The research for this project may then suggest new possibilities for controlling eutrophication and manipulating lake ecosystems to human advantage.

Revegetation and Nutrient Cycling Studies of Taconite Tailings (1974-75, Professor J. McColl, $2,713).

This project is intended to tie together available information and further refine treatment schedules of fertilization and specie mixes for a permanent vegetation and also define changes occurring over time, both of species and nutrients. The work will be divided into two phases: (1) statistically-based greenhouse studies in order to further refine current fertilization practices and minimize leaching losses, and (2) examination and analysis of a time-series of previous plantings in the field to determine changes which have occurred through time, such as shifts in species composition, fate of fertilizer materials, and increases in N levels due to leguminous nitrogen fixation.

Residential Energy Conservation (1974, Dr. H. Hickman, $1,500).

The two-fold goal of the project is to: (1) appraise the feasibility of a large scale effort designed to inform the owner of small

residential structures of energy saving measures he may wish to adopt, and (2) estimate the energy savings that potentially could follow if the conservation measures were to be adopted on a large scale. More specifically, the project will include summarizing energy conservation measures that can be instituted in residential structures, estimating the cost effectiveness of making these changes in homes built in this area, estimating the savings possible if various energy conserving measures were to be instituted in a specific community, drafting and testing a questionnaire to be completed by homeowners which will allow an estimate to be made of savings incumbent to him if he chooses to make a variety of recommended changes, and appraising the feasibility and cost of a mass mailing of such questionnaires to homeowners with subsequent computerized analysis of this data. The Council will provide partial funding ($1,500) of the project.

State Rivers Preservation Programs: Planning, Law and Politics, (1974, Professor D. Bryden, Mr. M. Priesnitz, up to $460).

The purpose of the project is to publish a study which will enable conservationists, both public and private, to cope effectively with the enormous variety of problems involved in creating a workable state program to preserve outstanding rivers. On a national level the project will furnish a thorough guide to the political, legal and practical "thickets" for use by conservationists throughout the country, and on the state level it will provide useful information for the Minnesota Department of Natural Resources. The Council approved funding of up to $460 to reimburse the project for long distance phone calls.

Minnesota Energy Project (1973-74, Professor D. Abrahamson, grant from Minnesota State Planning Agency for $58,985.60).

In August 1973 The Minnesota State Planning Agency appropriated $58,985.60 to the Council to undertake energy studies relating to the State of Minnesota. The study began September 1, 1973 and was completed in December 1974. Several tasks are being undertaken by the Project which include:

(1) A study of energy supply and demand in Minnesota: The objective is to provide a working knowledge of the sources, transportation, distribution and storage system for fuels and other energy forms in the State of Minnesota and to provide what information is available on end uses of fuel and other energy forms in the State.

(2) A primer on energy supply and demand in Minnesota: The objective of this task is to prepare a report which will aid in increasing the understanding by the Governor, the Legislature, and the public, of energy issues facing the State of Minnesota. The report will be concise, readable, and of modest size and will include summaries, selected to illuminate policy questions, of energy flows into the state, of the energy transportation, distribution and storage systems, and of end uses of energy.

(3) Fuel and power requirement of essential public services: The project will identify the fuel and power requirements for the delivery of essential public services, including public safety, prisons, hospitals, schools, and the municipal treatment of drinking water and of sewage.

(4) Fuel requirements for agricultural production: The objective is to collect and integrate pertinent information on the current, and insofar as possible, on the anticipated utilization of energy for agriculture in Minnesota. The study will be restricted to agricultural production and will not include processing of agricultural products except that processing, for example crop drying, which is ordinarily done on the farm or done in connection with the sale by the producer of the raw products.

(5) Technology and energy use and supply: The project will collect available information on current or likely developments in fuel and power technology, including supply and demand, and to identify their potential impact on energy supply and demand in Minnesota. This will include technical changes,

or employment of known technologies, which will enable a more efficient use of energy.

(6) Forecasting future energy requirements: The purpose of this study is to attempt to summarize and review current forecasts of energy demand and to describe the various methods and assumptions used in making these forecasts.

Draft reports for these tasks will be issued periodically and final reports will be issued in December 1974. The staff of the Minnesota Energy Project includes: Dean E. Abrahamson (principal investigator), Samuel Rankin, Steven Emmings, John Gostovich, Raymond Sobieck, Clara Hurd and Linda Bick.

PUBLIC SERVICE

In the last three years the Council has initiated several public service programs, including the Environmental Intern Program which seeks to place qualified students in internships with public and private environmentally-oriented agencies. In the fall of 1973 the Council began sponsoring "Common Ground", a daily radio program broadcast on over 50 Minnesota stations, which from every indication has been very successful. The program will be continued during 1974-75. The Council co-sponsored a public conference "Energy Conservation: Implications for Building Design and Operation" in the spring of 1973. Several grants -- one from the Johnson Foundation and another from the Minnesota Academy of Sciences -- have been made to the Council this year which involve public service activities.

In addition, the Council responds to a large number of requests from the Legislature, from state agencies and from members of the public for information regarding environmental courses, programs and activities. The Council also handles correspondence of this nature that comes through Central Administration at the University.

Environmental Intern Program (Prof. W. Maier, 1972-73 -- $3,800; 1973-74 -- $300).

The environmental intern program was initiated in Winter Quarter of 1972. Its objectives are to give students an opportunity to work in ongoing programs in environmental protection and to stimulate interaction of University faculty and government agencies. The working experience is intended as an extension of classroom experience and to acquaint students with the social-political-legal-economic constraints that operating agencies must contend with. Advanced undergraduate or graduate students from any unit of the University may participate in the program. Faculty in the Institute of Agriculture, the College of Biological Sciences, Colleges of Liberal Arts and Forestry assume responsibility for organization of additional unfunded trial programs such as advising students and placing students with the agencies. Participating agencies include: Minnesota Resources Commission, State Planning Agency, Corps of Engineers, Pollution Control Agency, Metropolitan Sewer Board, Department of Conservation, Environmental Protection Agency, Metropolitan Council, Highway Department, Department of Economic Development and the Department of Agriculture. The Council provided $3,800 during fiscal year 1972-73 for the project and $300 during fiscal year 1973-74.

"Common Ground": Radio Series, (initiated in fall 1973, prepared by M. Trigg, produced by M. Watson, $3,500).

In September 1973 Dean Abrahamson and Mary Trigg together with Marion Watson, Program Director at KUOM, began planning a radio program on environmental topics. "Common Ground," initiated in October 1973, seeks to bring to the general public some of the facts and arguments which bear on decisions having implications for environmental quality, lifestyles, and finite stocks of natural resources. The series includes production of five-minute daily interviews currently broadcast on KUOM and distributed to over 50 Minnesota stations. The program attempts to address issues of current interest to the people of Minnesota. The format has been to interview one guest on a particular topic for a series of five or ten programs.

"Common Ground" will be continued through 1974-75. Outside funding for production of the program is presently being sought.

Energy Conservation: Implications for Building Design and Operation, Conference held in Minneapolis, (Prof. D. Abrahamson, spring 1973)

In May 1973 Dean Abrahamson, with the assistance of the Department of Conferences, organized a one day conference on energy consumption and its implications for building design and operation. The conference was jointly sponsored by several units of the University which included, School of Public Affairs, Center for Urban and Regional Affairs, School of Architecture, Department of Conferences, Center for Studies of the Physical Environment in the Institute of Technology, All-University Council on Environmental Quality, and the Upper Midwest Council and the Minnesota Society of Architects. The conference opened with a discussion of energy supply and demand, with some comments on future availability and prices of energy, by Mr. Kenneth Saulter, Staff Economist with the Ford Foundation's Energy Policy Project. Mr. Charles Lawrence, Public Utilities Specialist, Office of the Mayor, New York City, described the results of a study of energy consumption in existing commercial buildings in New York City. He also described means to affect the energy use in existing buildings. The next speaker, Mr. Paul Achenbach, Chief, Building Environment Division of the National Bureau of Standards, discussed several projects involving energy use and building design and operation currently underway in the National Bureau of Standards and in agencies and groups with which the National Bureau of Standards is closely working. Mr. Gerald Rauenhorst, President, Rauenhorst Corporation, discussed at lunch the way in which he evaluates the energy use implications of the various decisions faced by a developer. In the afternoon Mr. Richard Stein of Richard G. Stein and Associates, New York City, presented the options available to the architect to influence energy use, and Mr. Fred Dubin, President, Dubin-Mindell-Bloome Associates of New York City, presented the range of options and implications which face the engineer. The proceedings of the conference were published in the fall of 1973 by the Council and the School of Public Affairs. The Council allocated funds ($480) for publishing 200 copies of the proceedings. The

proceedings were sold at $5 each and at present $337.50 has been collected and returned to Council funds.

Industry-Education Conference, Onamia, Minnesota (May 1974, Prof. D. Abrahamson)

The Minnesota Academy of Science and the Science Museum of Minnesota sponsored an Industry-Education Conference which was held in Onamia on May 12-14, 1974. The major focus of the program was on environmental impact, including the impact of governmental and industrial activity on the physical environment of Minnesota as well as on various social systems. The conference was directed toward the "probable" future environment of Minnesota based on present trends and in addition emphasized the role of education as the primary instrument for creating a desirable future environment for the State.

A grant of $1,000 was made to Dean Abrahamson and was added to the Council funds. Dr. Abrahamson prepared and presented a report at the conference which drew considerably on the Council's energy research being done in connection with the Minnesota Energy Project, sponsored by the Minnesota State Planning Agency.

Conference to Review Energy Policy Project Report, Racine, Wisconsin (May 1974, Prof. D. Abrahamson)

In May 1974 the Johnson Foundation in Racine, Wisconsin provided funding for, and co-sponsored with the Council, a meeting at the Foundation to evaluate the draft of the final report of the Ford Foundation's Energy Policy Project. Sixteen people from various universities and agencies across the country met for a two day conference in Racine on May 15 and 16, 1974. Dean Abrahamson, who is on the Advisory Board of the Energy Policy Project, chaired the conference. The Project, which is funded by the Ford Foundation and began two years ago, will publish a final report in fall 1974.

The participants in the Racine conference evaluated the draft report making recommendations which Dr. Abrahamson subsequently presented at the Project's Advisory Board meeting.

ADMINISTRATION

The Council provides a mechanism for the exchange of information between institutions engaged in environmental quality programs. These include such groups as Minnesota Public Interest Research Group, Minnesota Resources Commission, various state agencies, Minnesota industry and various Minnesota colleges and universities.

ALL-UNIVERSITY COUNCIL ON ENVIRONMENTAL QUALITY

SUMMARY OF FUNDING SOURCES

GENERAL FUNDING

Date	Source	Purpose	Amount
71-72	Central Administration	General	$15,000
72-73	Central Administration	General	20,000
71-72	Legislative Special	General	16,500
72-73	Legislative Special	General	15,000
73-74	Legislative Special	General	40,000
			$106,500

SPECIFIC GRANTS OR CONTRACTS TO THE COUNCIL

Date	Source	Purpose	Amount
73-74	Johnson Foundation	Energy Conference	$1,100
73-75	Minnesota Academy of Sciences	Industry-Education Conference	1,000
74-75	Ford Foundation	Energy Policy Project	1,195
73-74	Mn. State Planning Agency	Cu-Ni Studies	14,000
73-74	Mn. State Planning Agency	Mn. Energy Project	58,986
72-74	Central Administration	Environmental Bulletin	5,215
			$81,496

COUNCIL MEMBERSHIP 1971-1972

Member	Affiliation	Initial Appointment
Dean E. Abrahamson	Inst. Tech., Center for Studies of the Physical Environment and Dept. of Anatomy	1971-1974
Victor Arnold	School of Public Affairs	1971-1972
Richard Bond	School of Public Health, Div. Environmental Health	1971-1973
John Borchert	Center for Urban and Regional Affairs	ex officio
Alan Brook	Dept. Ecology and Behavioral Biology	1971-1974
David Bryden	Law School	1971-1972
Paula Giese	Humanities Program	1971-1973
Lowell Hanson	Dept. of Soil Science	1971-1973
Allen Johnson	General College	1971-1973
Albert Linck	Institute of Agriculture	1971-1972
Richard Skaggs	Dept. of Geography	1971-1974
William Walton	Water Resources Research Center	1971-1972
Donald White	Dept. Horticultural Science	1971-1974

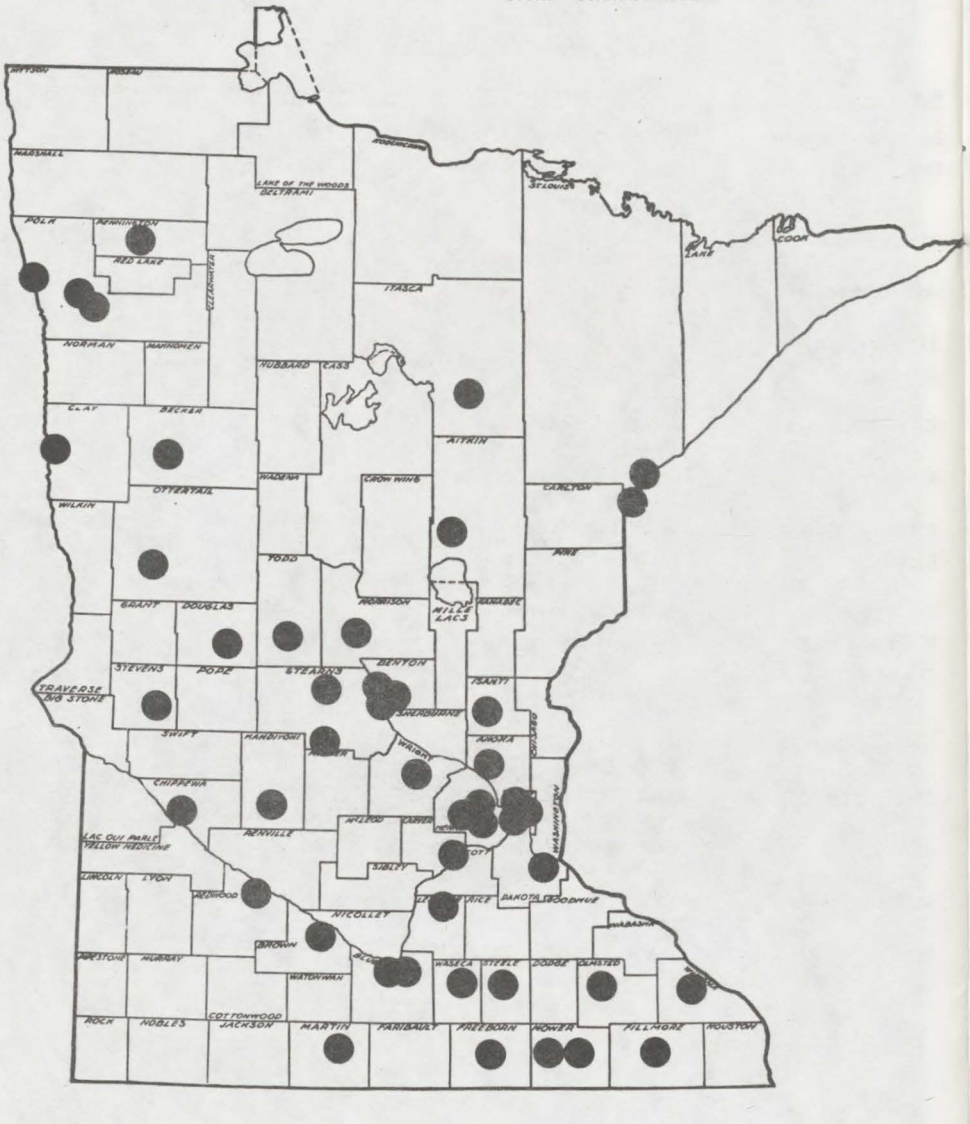
COUNCIL MEMBERSHIP 1972-73

Member	Affiliation	Initial Appointment	Reappointment
Dean E. Abrahamson	Inst. of Tech. Center for Studies of Physical Environment and School of Public Affairs	1971-1974	
Victor Arnold	School of Public Affairs	1971-1972	1972-1975
Perry Blackshear	Dept. Mechanical Engineering	1972-1975	
Richard Bond	Div. Environment Health, School of Public Health	1971-1973	
John Borchert	Center for Urban and Regional Affairs	ex officio	
Alan Brook	Dept. Ecology and Behavioral Biology	1971-1974	
David Bryden	Law School	1971-1972	1972-1975
Lowell Hanson	Dept. Soil Science	1971-1973	
Robert Holloway	Dept. Marketing and Business Law	1972-1975	
Allen Johnson	General College	1971-1973	
Roger Johnson	College of Education, Div. Elementary Education	1972-1975	
David R. McConville	Dept. Biological Science Waseca Campus	1972-1973	
Dale W. Olsen	Dept. Political Science Duluth Campus	1972-1973	
Donald Sargent	Agricultural Division Crookston Campus	1972-1973	
Richard Skaggs	Dept. of Geography	1971-1974	
Thomas Straw	Div. Science and Math Morris Campus	1972-1973	
William Walton	Water Resources Research Center	1971-1972	1972-1975
Donald White	Dept. Horticultural Science	1971-1974	

COUNCIL MEMBERSHIP 1973-1974

Member	Affiliation	Initial Appointment	Reappointment
Dean E. Abrahamson	School of Public Affairs	1971-1974	
Perry Blackshear	Inst. Tech. Center for Studies of the Physical Environment	1972-1975	
Richard Bond	Div. Environmental Health, School of Public Health	1971-1973	1973-1976
John Borchert	Center for Urban and Regional Affairs	ex officio	
Alan Freeman	Law School	1973-1976	
John Green	Dept. Geology Duluth	1973-1976	
Kathryn Hoelmer	Related Education Waseca	1973-1976	
Robert Holloway	Dept. of Marketing and Business Law	1972-1975	
Allen Johnson	General College	1971-1973	1973-1976
Roger Johnson	College of Education, Div. of Elementary Education	1972-1975	
William Miles	College of Forestry	1973-1976	
Richard Skaggs	Dept. of Geography	1971-1974	
Thomas Straw	Div. of Science and Mathematics Morris	1972-1973	1973-1976
Daniel Svedarsky	Agricultural Division Crookston	1973-1976	
John Tester	Dept. Ecology and Behavioral Biology	1973-1976	
John Waelti	Dept. Agriculture and Applied Economics	1973-1976	
William Walton	Water Resources Research Center	1971-1972	1972-1975
Donald White	Dept. Horticultural Science	1971-1974	

GEOGRAPHICAL DISTRIBUTION OF STATIONS
USING "COMMON GROUND"



"COMMON GROUND"

October 1973 - October 1974

Speaker	Topic	Number of weeks broadcast
Dean Abrahamson Prof. of Public Affairs	Energy sources and use	2
Dean Abrahamson	Nuclear Power	1
John Olin Pollution Control Agency	Hazards of asbestos	2
Thomas Bender Assoc. Prof. Architecture	Energy conservation in the home	2
Ernst Eckert Regents Prof. of Mechanical Engineering	Solar Power	2
Dixon Ward Prof. of Communication Disorders & Otolaryngology	Noise pollution	1
John Green Prof. of Geology, UMD	Copper nickel mining in Minnesota	2
Steve Hedman Assistant Prof. of Biology, UMD	Boundary Waters Canoe Area	1
Perry Blackshear Prof. of Mechanical Engineering	Energy from solid waste	2
Dean Abrahamson	State energy bills	2
Robert Williams Senior staff member, Ford Foundation Energy Policy Project	The Energy Policy Project	2
Dennis Holloway Assistant Prof. of Architecture	Ouroboros, experimental house in Rosemount, Minnesota	2
Steve Parliament Grad. student, Political Science	Housing and urban development	2

Speaker	Topic	Number of weeks broadcast
John Gostovich Grad. student, Agriculture and Applied Economics	Energy and agriculture	2
Joseph Shapiro Prof. of Geology and Geophysics	Lakes and eutrophication	1
Daniel Kohl Assoc. Prof. of Biology Washington U., St. Louis	Fertilizers	2
Kevin Shea Editor, Environment Magazine, St. Louis	Pesticides	3
Dean Abrahamson	Proliferation of nuclear material	1
Lee Martin Prof. of Agriculture and Applied Economics	World food supply problems	2
Bud Heinselman Forest Ecologist	Copper nickel development in the Boundary Waters Canoe Area	1
Herbert Wright Regents Prof. Geology, Ecology and Botany	Logging and the Boundary Waters Canoe Area	1
Jack Schutz Manager of Energy Services Norther States Power Co.	Energy conservation in the home	1
Herman Daly Prof. of Economics Louisiana State U.	Energy forecasting No growth theories	2